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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/699,109

10/31/2003

Edward C. Gunzel

FA/261

1873

28596 7590 11/03/2009
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EXAMINER

COLE, ELIZABETH M

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

11/03/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/699,109	Applicant(s) GUNZEL ET AL.	
	Examiner Elizabeth M. Cole	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 September 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 and 82-86 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-37, 82-86 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/11/09 has been entered.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-8, 16-32, 82-86 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication 2001/0006173 to Rock et al taken with Graber, U.S. Patent No. 6,243,870 and in view of Caird et al, U.S. Patent NO. 3,768,156. Rock discloses a fabric having a conductive cable attached to it. The fabric can be a knitted, woven or nonwoven material and can comprise multiple layers. The fabric can be hydrophobic or hydrophilic. See paragraph 0020. The conductive cable can be covered by a barrier layer which corresponds to the claimed tape. The barrier layer can comprise multiple layers. The layers can comprise polyurethane and PTFE among other materials. The barrier layer can be adhesively bonded to the fabric layer and overlies the conductive cable. See figure 12 as well as paragraph 0031. With regard to the limitations set forth in claims 22-26, no structure is set forth for the claimed articles. Therefore, these statements have been considered to be statements of

Art Unit: 1794

intended use. Rock et al differs from the claimed invention because although Rock et al does disclose employing multiple fabric layers it does not explicitly state that the cable extends across two of the layers. Caird et al teaches that conductive cables such as electrodes can be incorporated into garments such as jacket so that the cable extends across two fabric panels. See figure 3 as well as col. 3, line 53 – col. 4, line 41.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the jacket of Rock so that the cable extended across two fabric panels, motivated by the teaching of Caird that this was a known method of forming a garment such as a jacket which comprised conductive elements and because the more panels that are used in jackets the better the fit of the jacket.

With regard to the limitations regarding the conductivity of the cable, since the cables in Rock are used as heating elements, it would have been obvious to have selected the appropriate conductivity and resistance in the cables in order to produce a material having the desired properties. With regard to the limitations regarding durability after washing, since Rock appears to disclose the same structure, presumably the material of Rock would meet these limitations.

4. With regard to the limitation that the tape has a narrow width justly slightly greater than the cable width, Rock teaches that the barrier layer can have two functions in the fabric body. First, the barrier layer can be provided in order to impart properties such as preventing air and water droplets to pass through the fabric in order to provide a windproof, water resistant and vapor permeable fabric. See paragraphs 0031.

Second, the barrier layer can be provided to protect the circuit against the effects of

Art Unit: 1794

abrasion. See paragraph 0033. Rock differs from the claimed invention because it does not teach or show that the barrier layer can be narrow and only slightly wider than the cable. However, since Rock teaches providing the barrier for two reasons, to form a windproof, water resistant fabric/garment and to protect the cable, it would have been obvious to have formed the barrier so that it only was slightly wider than the cable, in situations where the properties of being windproof and water resistant were not desired in the entire garment, for example, in garments intended for use in hot weather, etc. Further, Caird et al teaches that it is known to provide tapes, (element 4) to protect cables in electrically conductive fabrics, which are only slightly wider than the cable. Therefore, the person of ordinary skill in the art at the time the invention was made would have been able to select the particular size of the barrier layer of Rock, in view of the teachings both of Rock and Caird, including a size which was only slightly wider than the cable, in order to produce a less expensive and lighter weight fabric, while still protecting the electrical cable and circuit.

5. With regard to the limitation that the fabric comprises more than one electronic module and connectors attached to the cable ends, Rock shows connector ends 46 and 47 which can be attached to electronic modules. See paragraph 0027. Therefore, it appears that Rock could be connected to more than electronic module. Further, Graber teaches incorporate electronic connectors into garments which can be connected to more than one electronic module, such as one for power and one for information, (see col. 3, lines 50-66). Therefore, it would have been obvious to one of ordinary skill in the

Art Unit: 1794

art to have employed more than one electronic module as taught by Graber, depending on the desired end use of the finished product.

6. With regard to the limitations regarding durability, since Rock appears to provide the same structure of a barrier layer and adhesive overlying a cable, it is reasonable to expect that Rock would have the claimed durability. Also, see the discussion of the Gunzel declaration in the previous action, (repeated below for convenience), and the response to arguments below. With regard to the limitation that the barrier layer is a composite layer with a knitted layer and a barrier layer, it is noted that Rock teaches at paragraph 0031 that it is desirable for the barrier layer to be vapor permeable but non porous and that it is also preferred that the barrier layer be soft and stretchable. Rock teaches that knitted layers are soft and stretchable in paragraph 0031. Therefore, it would have been obvious to have employed a composite barrier layer which comprised an impermeable layer and a knitted layer, in order to provide a barrier which was both soft and which provided a non porous barrier.

7. Claims 9-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rock et al taken with Graber, U.S. Patent No. 6,243,870 and in view of Caird et al, U.S. Patent NO. 3,768,156 as applied to claims above, and further in view of Cordia et al, U.S. Patent No. 5,236,765. Rock discloses a hearable fabric as set forth above. Rock differs from the claimed invention because Rock et al does not disclose the particular types of adhesives which can be used to bond the barrier layer which overlies the cable to the fabric layer. Cordia teaches at col. 9, lines 4-16, that pressure sensitive, hot melt or curable adhesives can be used to bond heating elements to fabric layers. Therefore,

Art Unit: 1794

it would have been obvious to one of ordinary skill in the art at the time the invention to have employed the particular adhesives set forth by Cordia to bond the barrier tape of Rock to the fabric layer, since Cordia teaches that such adhesives are suitable for use to bond heating elements to fabric layers.

8. Claims 33-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rock et al taken with Graber, U.S. Patent No. 6,243,870 and in view of Caird et al as applied to claims above, and further in view of Parker, U.S. Patent No. 5,658,164. Rock discloses a hearable fabric as set forth above. Rock differs from the claimed invention because Rock does not disclose employing a micro ribbon as the conductive cable. Parker teaches that micro-ribbon cables which comprise an insulation layer can be used to form electrical connections. Therefore, it would have been obvious to one of ordinary skill in the art at the time to have employed a micro-ribbon as the cable in Rock. One of ordinary skill in the art would have been motivated to employ a micro ribbon cable because Parker teaches that such cables are rugged and durable. See col. 4, lines 40-45.

9. The Declaration under 37 CFR 1.132 filed 1/8/09 is insufficient to overcome the rejection of claims based upon Rock in view of Caird and further in view of Parker as set forth in the last Office action because: the evidence set forth in the declaration is not commensurate in scope with the claims. The claims are not limited to the particular materials used in the declaration. The claims do not recite particular laminate strength. The claims do not quantify what is meant by a slightly wider tape covering versus a wider tape covering. The evidence set forth is for a much for limited embodiment than

Art Unit: 1794

what is claimed. Also, it is noted that Rock discloses employing an adhesive and/or lamination to bond the barrier layer to the fabric, therefore when the Declaration discusses forming the sample fabrics by either taping or laminating, it is not clear what the difference is between the two processes and whether the laminating disclosed by Rock is the same as that employed in the test set forth in the Declaration and how the adhesive bonding discussed by Rock is accounted for in the declaration and how adhesively bonding a barrier layer on to the fabric would be different than taping, i.e., what is the difference between employing a preformed tape, (presumably having a structure of adhesive plus backing) and adhesively bonding the barrier layer which would produce the same structure of adhesive plus backing in the finished product. .

10. Applicant's arguments filed 9/11/09 have been fully considered but they are not persuasive.

11. Applicant argues that Rock does not disclose the claimed structure having the claimed durability to washing or the claimed wet flex and abrasion. In support of this, Applicant points to the Gunzel Declaration filed 1/8/09. However, as previously noted, the Gunzel Declaration was not persuasive because it is not clear what the methods of applying the barrier layer to the fabric of Rock were. Specifically, Rock teaches that the barrier layer can be applied via adhesive and/or a lamination process. (see paragraph 0032). Similarly, it is noted that the instant specification teaches that thermally activated adhesives can be used, (see paragraph 0024 of the published application). There is nothing on the record which adequately distinguishes the bonding process of Applicant from Rock's bonding process. The Declaration states that the structures which are

Art Unit: 1794

considered to correspond to the Rock structures are formed by lamination while the instant structure is formed by adhesive bonding. However, it is not clear what the difference is. A tape or barrier layer, i.e., a PTFE layer for example, which is coated with a hot melt adhesive and then bonded via heat and pressure to a fabric layer could be considered an example of adhesive bonding and lamination. It is not clear that these two terms are mutually exclusive. It appears that lamination is a type of adhesive bonding, i.e., bonding with heat and pressure. Bonding with a thermally activated adhesive would encompass lamination in that bonding would take place with heat and pressure. For example, paragraph 0039 of the published application discloses that the method of bonding in the instant invention includes heating and pressing, which is a lamination process. Therefore, the distinction which Applicant is attempting to bring forward in the Declaration and arguments is not clear. Further, while Applicant argues that one of ordinary skill in the art would not equate a tape as claimed with the barrier layer and adhesive of Rock, structurally, there does not seem to be any difference between the two. If Applicant can clarify the record and establish that by a showing which is commensurate in scope with what is shown in Rock and what is taught in the instant specification that the difference either in process of bonding or in structure results in a difference in properties such that the Rock material does not have the claimed durability, etc., then the rejection over Rock for independent claim 1 and claims dependent on independent claim 1 will be withdrawn. The showing needs to be commensurate in scope with what is shown in Rock and what is taught in the instant specification and clarify what exactly the distinction is between lamination and adhesive

Art Unit: 1794

bonding, in view of the comments set forth above. It is also important that the showing be commensurate in scope with what is claimed or that Applicant extrapolates the data set forth in any showing to what is claimed. However, presently, the Declaration is not sufficient to overcome the Rock reference.

12. Applicant argues that the instant tape is distinguished in the specification at page 7, line 29 – page 8, line 26 and that the examples describe the tape and the application of the tape and that the seam sealing tape and processes used for the application of the tape to a garment are also described at pages 12-14 of the instant application.

However, while the claims are interpreted in light of the specification, limitations or structure are not read into the claims from the specification. Further, with regard the claimed structure, as noted in the prior art rejection, Rock et al teaches that the barrier layer can comprise fabrics such as knit fabric as well as plastic layers and that the barrier layer is desirably soft and therefore it would have been obvious to have formed a composite barrier layer which correspond to the claimed tape.

13. Applicant argues that Rock does not teach laminating the over a seam because Rock calls for a smooth surface or a flat fabric. However, a seam does not make a fabric not be flat or smooth. Most garments have seams but the fabrics are in the same place and the seam does not form a bump or gap. Most garments have seams which are pressed flat and are flush with the rest of the garment. Caird et al teaches that conductive cables such as electrodes can be incorporated into garments such as jacket so that the cable extends across two fabric panels. See figure 3 as well as col. 3, line 53 – col. 4, line 41. Therefore, it would have been obvious to one of ordinary skill in the

Art Unit: 1794

art at the time the invention was made to have formed the jacket of Rock so that the cable extended across two fabric panels, motivated by the teaching of Caird that this was a known method of forming a garment such as a jacket which comprised conductive elements and because the more panels that are used in jackets the better the fit of the jacket.

14. Applicant argues that there would not be a reasonable expectation of success because Caird does not employ lamination and Rock requires a smooth or flat surface. However, as noted above, mostly garments comprise multiple seams and darts and are still smooth and flat. Further, as noted above, Rock clearly teaches employing an adhesive or lamination to bond the barrier layer to the fabric layer.

15. Applicant argues that Caird does not clearly teach how the fabric panels are joined. However, the panels would have to be joined by a seam and conventionally garments are formed with sewn seams. Further, it is noted the claims do not recite a sewn seam, but just a seam. However, as noted, sewing panels together to form a garment is the most common and conventional way to form a garment.

16. With regard to Rock with Graber in view of Caird and Parker, it is noted that applicant argues that none of the references disclose a fabric body comprising a seam and the length of the cable extending along the seam that is covered by a seam sealing tape wherein the liquid proof seam is formed the comprises the textile, the seam, the cable and the seam sealing tape. However, Rock teaches a liquid proof tape, (see paragraph 0031).

Art Unit: 1794

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth M. Cole whose telephone number is (571) 272-1475. The examiner may be reached between 6:30 AM and 6:00 PM Monday through Wednesday, and 6:30 AM and 2 PM on Thursday.

The examiner's supervisor Rena Dye may be reached at (571) 272-3186.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

The fax number for all official faxes is (571) 273-8300.

/Elizabeth M. Cole/
Primary Examiner, Art Unit 1794

e.m.c